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     Walke, D. Wade
     Turner, C. Alexander Jr.

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                                      7

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<212> PRT
<213> homo sapiens

<400> 4

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Gly Trp Ala Thr Phe Gln Gln Met Ser Pro Ser Arg Asn Phe Ser Phe
            20                  25                  30
Arg Leu Phe Pro Glu Thr Ala Pro Gly Ala Pro Gly Ser Ile Pro Ala
        35                  40                  45
Pro Pro Ala Pro Gly Asp Glu Ala Ala Gly Ser Arg Val Glu Arg Leu
    50                  55                  60
Gly Gln Ala Phe Arg Arg Arg Val Arg Leu Leu Arg Glu Leu Ser Glu
65                  70                  75                  80
Arg Leu Glu Leu Val Phe Leu Val Asp Asp Ser Ser Ser Val Gly Glu
                85                  90                  95
Val Asn Phe Arg Ser Glu Leu Met Phe Val Arg Lys Leu Leu Ser Asp
            100                 105                 110
Phe Pro Val Val Pro Thr Ala Thr Arg Val Ala Ile Val Thr Phe Ser
        115                 120                 125
Ser Lys Asn Tyr Val Val Pro Arg Val Asp Tyr Ile Ser Thr Arg Arg
    130                 135                 140
Ala Arg Gln His Lys Cys Ala Leu Leu Leu Gln Glu Ile Pro Ala Ile
145                 150                 155                 160
Ser Tyr Arg Gly Gly Gly Thr Tyr Thr Lys Gly Ala Phe Gln Gln Ala
                165                 170                 175
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Ala Gln Ile Leu Leu His Ala Arg Glu Asn Ser Thr Lys Val Val Phe
            180                 185                 190
Leu Ile Thr Asp Gly Tyr Ser Asn Gly Gly Asp Pro Arg Pro Ile Ala
            195                 200                 205
Ala Ser Leu Arg Asp Ser Gly Val Glu Ile Phe Thr Phe Gly Ile Trp
    210                 215                 220
Gln Gly Asn Ile Arg Glu Leu Asn Asp Met Ala Ser Thr Pro Lys Glu
225                 230                 235                 240
Glu His Cys Tyr Leu Leu His Ser Phe Glu Glu Phe Glu Ala Leu Ala
            245                 250                 255
Arg Arg Ala Leu His Glu Asp Leu Pro Ser Gly Ser Phe Ile Gln Asp
            260                 265                 270
Asp Met Val His Cys Ser Tyr Leu Cys Asp Glu Gly Lys Asp Cys Cys
            275                 280                 285
Asp Arg Met Gly Ser Cys Lys Cys Gly Thr His Thr Gly His Phe Glu
    290                 295                 300
Cys Ile Cys Glu Lys Gly Tyr Tyr Gly Lys Gly Leu Gln Tyr Glu Cys
305                 310                 315                 320
Thr Ala Cys Pro Ser Gly Thr Tyr Lys Pro Glu Gly Ser Pro Gly Gly
            325                 330                 335
Ile Ser Ser Cys Ile Pro Cys Pro Asp Glu Asn His Thr Ser Pro Pro
            340                 345                 350
Gly Ser Thr Ser Pro Glu Asp Cys Val Cys Arg Glu Gly Tyr Arg Ala
            355                 360                 365
Ser Gly Gln Thr Cys Glu Leu Val His Cys Pro Ala Leu Lys Pro Pro
    370                 375                 380
Glu Asn Gly Tyr Phe Ile Gln Asn Thr Cys Asn Asn His Phe Asn Ala
385                 390                 395                 400
Ala Cys Gly Val Arg Cys His Pro Gly Phe Asp Leu Val Gly Ser Ser
            405                 410                 415
Ile Ile Leu Cys Leu Pro Asn Gly Leu Trp Ser Gly Ser Glu Ser Tyr
            420                 425                 430
Cys Arg Val Arg Thr Cys Pro His Leu Arg Gln Pro Lys His Gly His
            435                 440                 445
Ile Ser Cys Ser Thr Arg Glu Met Leu Tyr Lys Thr Thr Cys Leu Val
    450                 455                 460
Ala Cys Asp Glu Gly Tyr Arg Leu Glu Gly Ser Asp Lys Leu Thr Cys
465                 470                 475                 480
Gln Gly Asn Ser Gln Trp Asp Gly Pro Glu Pro Arg Cys Val Glu Arg
            485                 490                 495
His Cys Ser Thr Phe Gln Met Pro Lys Asp Val Ile Ile Ser Pro His
            500                 505                 510
Asn Cys Gly Lys Gln Pro Ala Lys Phe Gly Thr Ile Cys Tyr Val Ser
            515                 520                 525
Cys Arg Gln Gly Phe Ile Leu Ser Gly Val Lys Glu Met Leu Arg Cys
    530                 535                 540
Thr Thr Ser Gly Lys Trp Asn Val Gly Val Gln Ala Ala Val Cys Lys
545                 550                 555                 560
Asp Val Glu Ala Pro Gln Ile Asn Cys Pro Lys Asp Ile Glu Ala Lys
            565                 570                 575
Thr Leu Glu Gln Gln Asp Ser Ala Asn Val Thr Trp Gln Ile Pro Thr
            580                 585                 590
Ala Lys Asp Asn Ser Gly Glu Lys Val Ser Val His Val His Pro Ala
            595                 600                 605
Phe Thr Pro Pro Tyr Leu Phe Pro Ile Gly Asp Val Ala Ile Val Tyr
            610                 615                 620
```

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Thr Ala Thr Asp Leu Ser Gly Asn Gln Ala Ser Cys Ile Phe His Ile
625             630             635             Ile Phe His 640
Lys Val Ile Asp Ala Glu Pro Pro Val Ile Asp Trp Cys Arg Ser Pro
            645             650             655
Pro Pro Val Gln Val Ser Glu Lys Val His Ala Ala Ser Trp Asp Glu
            660             665             670
Pro Gln Phe Ser Asp Asn Ser Gly Ala Glu Leu Val Ile Thr Arg Ser
            675             680             685
His Thr Gln Gly Asp Leu Phe Pro Gln Gly Glu Thr Ile Val Gln Tyr
            690             695             700
Thr Ala Thr Asp Pro Ser Gly Asn Asn Arg Thr Cys Asp Ile His Ile
705             710             715             720
Val Ile Lys Gly Ser Pro Cys Glu Ile Pro Phe Thr Pro Val Asn Gly
            725             730             735
Asp Phe Ile Cys Thr Pro Asp Asn Thr Gly Val Asn Cys Thr Leu Thr
            740             745             750
Cys Leu Glu Gly Tyr Asp Phe Thr Glu Gly Ser Thr Asp Lys Tyr Tyr
            755             760             765
Cys Ala Tyr Glu Asp Gly Val Trp Lys Pro Thr Tyr Thr Thr Glu Trp
            770             775             780
Pro Asp Cys Ala Lys Lys Arg Phe Ala Asn His Gly Phe Lys Ser Phe
785             790             795             800
Glu Met Phe Tyr Lys Ala Ala Arg Cys Asp Asp Thr Asp Leu Met Lys
            805             810             815
Lys Phe Ser Glu Ala Phe Glu Thr Thr Leu Gly Lys Met Val Pro Ser
            820             825             830
Phe Cys Ser Asp Ala Glu Asp Ile Asp Cys Arg Leu Glu Glu Asn Leu
            835             840             845
Thr Lys Lys Tyr Cys Leu Glu Tyr Asn Tyr Asp Tyr Glu Asn Gly Phe
            850             855             860
Ala Ile Gly Pro Gly Gly Trp Gly Ala Ala Asn Arg Leu Asp Tyr Ser
865             870             875             880
Tyr Asp Asp Phe Leu Asp Thr Val Gln Glu Thr Ala Thr Ser Ile Gly
            885             890             895
Asn Ala Lys Ser Ser Arg Ile Lys Arg Ser Ala Pro Leu Ser Asp Tyr
            900             905             910
Lys Ile Lys Leu Ile Phe Asn Ile Thr Ala Ser Val Pro Leu Pro Asp
            915             920             925
Glu Arg Asn Asp Thr Leu Glu Trp Glu Asn Gln Gln Arg Leu Leu Gln
            930             935             940
Thr Leu Glu Thr Ile Thr Asn Lys Leu Lys Arg Thr Leu Asn Lys Asp
945             950             955             960
Pro Met Tyr Ser Phe Gln Leu Ala Ser Glu Ile Leu Ile Ala Asp Ser
            965             970             975
Asn Ser Leu Glu Thr Lys Lys Ala Ser Pro Phe Cys Arg Pro Gly Ser
            980             985             990
Val Leu Arg Gly Arg Met Cys Val Asn Cys Pro Leu Gly Thr Tyr Tyr
            995             1000            1005
Asn Leu Glu His Phe Thr Cys Glu Ser Cys Arg Ile Gly Ser Tyr Gln
            1010            1015            1020
Asp Glu Glu Gly Gln Leu Glu Cys Lys Leu Cys Pro Ser Gly Met Tyr
1025            1030            1035            1040
Thr Glu Tyr Ile His Ser Arg Asn Ile Ser Asp Cys Lys Ala Gln Cys
            1045            1050            1055
Lys Gln Gly Thr Tyr Ser Tyr Ser Gly Leu Glu Thr Cys Glu Ser Cys
            1060            1065            1070
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Pro Leu Gly Thr Tyr Gln Pro Lys Phe Gly Ser Arg Ser Cys Leu Ser
        1075              1080              1085
Cys Pro Glu Asn Thr Ser Thr Val Lys Arg Gly Ala Val Asn Ile Ser
        1090              1095              1100
Ala Cys Gly Val Pro Cys Pro Glu Gly Lys Phe Ser Arg Ser Gly Leu
1105              1110              1115              1120
Met Pro Cys His Pro Cys Pro Arg Asp Tyr Tyr Gln Pro Asn Ala Gly
        1125              1130              1135
Lys Ala Phe Cys Leu Ala Cys Pro Phe Tyr Gly Thr Thr Pro Phe Ala
        1140              1145              1150
Gly Ser Arg Ser Ile Thr Glu Cys Ser Ser Phe Ser Ser Thr Phe Ser
        1155              1160              1165
Ala Ala Glu Glu Ser Val Val Pro Pro Ala Ser Leu Gly His Ile Lys
        1170              1175              1180
Lys Arg His Glu Ile Ser Ser Gln Val Phe His Glu Cys Phe Phe Asn
1185              1190              1195              1200
Pro Cys His Asn Ser Gly Thr Cys Gln Gln Leu Gly Arg Gly Tyr Val
        1205              1210              1215
Cys Leu Cys Pro Leu Gly Tyr Thr Gly Leu Lys Cys Glu Thr Asp Ile
        1220              1225              1230
Asp Glu Cys Ser Pro Leu Pro Cys Leu Asn Asn Gly Val Cys Lys Asp
        1235              1240              1245
Leu Val Gly Glu Phe Ile Cys Glu Cys Pro Ser Gly Tyr Thr Gly Gln
        1250              1255              1260
Arg Cys Glu Glu Asn Ile Asn Glu Cys Ser Ser Ser Pro Cys Leu Asn
1265              1270              1275              1280
Lys Gly Ile Cys Val Asp Gly Val Ala Gly Tyr Arg Cys Thr Cys Val
        1285              1290              1295
Lys Gly Phe Val Gly Leu His Cys Glu Thr Glu Val Asn Glu Cys Gln
        1300              1305              1310
Ser Asn Pro Cys Leu Asn Asn Ala Val Cys Glu Asp Gln Val Gly Gly
        1315              1320              1325
Phe Leu Cys Lys Cys Pro Pro Gly Phe Leu Gly Thr Arg Cys Gly Lys
        1330              1335              1340
Asn Val Asp Glu Cys Leu Ser Gln Pro Cys Lys Asn Gly Ala Thr Cys
1345              1350              1355              1360
Lys Asp Gly Ala Asn Ser Phe Arg Cys Leu Cys Ala Ala Gly Phe Thr
        1365              1370              1375
Gly Ser His Cys Glu Leu Asn Ile Asn Glu Cys Gln Ser Asn Pro Cys
        1380              1385              1390
Arg Asn Gln Ala Thr Cys Val Asp Glu Leu Asn Ser Tyr Ser Cys Lys
        1395              1400              1405
Cys Gln Pro Gly Phe Ser Gly Gln Arg Cys Glu Thr Glu Gln Ser Thr
        1410              1415              1420
Gly Phe Asn Leu Asp Phe Glu Val Ser Gly Ile Tyr Gly Tyr Val Met
1425              1430              1435              1440
Leu Asp Gly Met Leu Pro Ser Leu His Ala Leu Thr Cys Thr Phe Trp
        1445              1450              1455
Met Lys Ser Ser Asp Asp Met Asn Tyr Gly Thr Pro Ile Ser Tyr Ala
        1460              1465              1470
Val Asp Asn Gly Ser Asp Asn Thr Leu Leu Leu Thr Asp Tyr Asn Gly
        1475              1480              1485
Trp Val Leu Tyr Val Asn Gly Arg Glu Lys Ile Thr Asn Cys Pro Ser
        1490              1495              1500
Val Asn Asp Gly Arg Trp His His Ile Ala Ile Thr Trp Thr Ser Ala
1505              1510              1515              1520
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11

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Asn Gly Ile Trp Lys Val Tyr Ile Asp Gly Lys Leu Ser Asp Gly Gly
              1525                1530                1535
Ala Gly Leu Ser Val Gly Leu Pro Ile Pro Gly Gly Gly Ala Leu Val
          1540                1545                1550
Leu Gly Gln Glu Gln Asp Lys Lys Gly Glu Gly Phe Ser Pro Ala Glu
          1555                1560                1565
Ser Phe Val Gly Ser Ile Ser Gln Leu Asn Leu Trp Asp Tyr Val Leu
      1570                1575                1580
Ser Pro Gln Gln Val Lys Ser Leu Ala Thr Ser Cys Pro Glu Glu Leu
1585                1590                1595                1600
Ser Lys Gly Asn Val Leu Ala Trp Pro Asp Phe Leu Ser Gly Ile Val
              1605                1610                1615
Gly Lys Val Lys Ile Asp Ser Lys Ser Ile Phe Cys Ser Asp Cys Pro
          1620                1625                1630
Arg Leu Gly Gly Ser Val Pro His Leu Arg Thr Ala Ser Glu Asp Leu
          1635                1640                1645
Lys Pro Gly Ser Lys Val Asn Leu Phe Cys Asp Pro Gly Phe Gln Leu
      1650                1655                1660
Val Gly Asn Pro Val Gln Tyr Cys Leu Asn Gln Gly Gln Trp Thr Gln
1665                1670                1675                1680
Pro Leu Pro His Cys Glu Arg Ile Ser Cys Gly Val Pro Pro Pro Leu
              1685                1690                1695
Glu Asn Gly Phe His Ser Ala Asp Asp Phe Tyr Ala Gly Ser Thr Val
          1700                1705                1710
Thr Tyr Gln Cys Asn Asn Gly Tyr Tyr Leu Leu Gly Asp Ser Arg Met
          1715                1720                1725
Phe Cys Thr Asp Asn Gly Ser Trp Asn Gly Val Ser Pro Ser Cys Leu
      1730                1735                1740
Asp Val Asp Glu Cys Ala Val Gly Ser Asp Cys Ser Glu His Ala Ser
1745                1750                1755                1760
Cys Leu Asn Val Asp Gly Ser Tyr Ile Cys Ser Cys Val Pro Pro Tyr
              1765                1770                1775
Thr Gly Asp Gly Lys Asn Cys Ala Glu Pro Ile Lys Cys Lys Ala Pro
          1780                1785                1790
Gly Asn Pro Glu Asn Gly His Ser Ser Gly Glu Ile Tyr Thr Val Gly
          1795                1800                1805
Ala Ala Val Thr Phe Ser Cys Gln Glu Gly Tyr Gln Leu Met Gly Val
      1810                1815                1820
Thr Lys Ile Thr Cys Leu Glu Ser Gly Glu Trp Asn His Leu Ile Pro
1825                1830                1835                1840
Tyr Cys Lys Ala Val Ser Cys Gly Lys Pro Ala Ile Pro Glu Asn Gly
              1845                1850                1855
Cys Ile Glu Glu Leu Ala Phe Thr Phe Gly Ser Lys Val Thr Tyr Arg
          1860                1865                1870
Cys Asn Lys Gly Tyr Thr Leu Ala Gly Asp Lys Glu Ser Ser Cys Leu
          1875                1880                1885
Ala Asn Ser Ser Trp Ser His Ser Pro Pro Val Cys Glu Pro Val Lys
      1890                1895                1900
Cys Ser Ser Pro Glu Asn Ile Asn Asn Gly Lys Tyr Ile Leu Ser Gly
1905                1910                1915                1920
Leu Thr Tyr Leu Ser Thr Ala Ser Tyr Ser Cys Asp Thr Gly Tyr Ser
              1925                1930                1935
Leu Gln Gly Pro Ser Ile Ile Glu Cys Thr Ala Ser Gly Ile Trp Asp
          1940                1945                1950
Arg Ala Pro Pro Ala Cys His Leu Val Phe Cys Gly Glu Pro Pro Ala
          1955                1960                1965
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12

Ile Lys Asp Ala Val Ile Thr Gly Asn Asn Phe Thr Phe Arg Asn Thr
    1970   1975   1980

Val Thr Tyr Thr Cys Lys Glu Gly Tyr Thr Leu Ala Gly Leu Asp Thr
1985   1990   1995   2000

Ile Glu Cys Leu Ala Asp Gly Lys Trp Ser Arg Ser Asp Gln Gln Cys
        2005   2010   2015

Leu Ala Val Ser Cys Asp Glu Pro Pro Ile Val Asp His Ala Ser Pro
        2020   2025   2030

Glu Thr Ala His Arg Leu Phe Gly Asp Ile Ala Phe Tyr Tyr Cys Ser
          2035   2040   2045

Asp Gly Tyr Ser Leu Ala Asp Asn Ser Gln Leu Leu Cys Asn Ala Gln
        2050   2055   2060

Gly Lys Trp Val Pro Pro Glu Gly Gln Asp Met Pro Arg Cys Ile Ala
2065   2070   2075   2080

His Phe Cys Glu Lys Pro Pro Ser Val Ser Tyr Ser Ile Leu Glu Ser
          2085   2090   2095

Val Ser Lys Ala Lys Phe Ala Ala Gly Ser Val Val Ser Phe Lys Cys
        2100   2105   2110

Met Glu Gly Phe Val Leu Asn Thr Ser Ala Lys Ile Glu Cys Met Arg
          2115   2120   2125

Gly Gly Gln Trp Asn Pro Ser Pro Met Ser Ile Gln Cys Ile Pro Val
        2130   2135   2140

Arg Cys Gly Glu Pro Pro Ser Ile Met Asn Gly Tyr Ala Ser Gly Ser
2145   2150   2155   2160

Asn Tyr Ser Phe Gly Ala Met Val Ala Tyr Ser Cys Asn Lys Gly Phe
          2165   2170   2175

Tyr Ile Lys Gly Glu Lys Lys Ser Thr Cys Glu Ala Thr Gly Gln Trp
          2180   2185   2190

Ser Ser Pro Ile Pro Thr Cys His Pro Val Ser Cys Gly Glu Pro Pro
          2195   2200   2205

Lys Val Glu Asn Gly Phe Leu Glu His Thr Thr Gly Arg Ile Phe Glu
        2210   2215   2220

Ser Glu Val Arg Tyr Gln Cys Asn Pro Gly Tyr Lys Ser Val Gly Ser
2225   2230   2235   2240

Pro Val Phe Val Cys Gln Ala Asn Arg His Trp His Ser Glu Ser Pro
          2245   2250   2255

Leu Met Cys Val Pro Leu Asp Cys Gly Lys Pro Pro Pro Ile Gln Asn
        2260   2265   2270

Gly Phe Met Lys Gly Glu Asn Phe Glu Val Gly Ser Lys Val Gln Phe
          2275   2280   2285

Phe Cys Asn Glu Gly Tyr Glu Leu Val Gly Asp Ser Ser Trp Thr Cys
        2290   2295   2300

Gln Lys Ser Gly Lys Trp Asn Lys Lys Ser Asn Pro Lys Cys Met Pro
2305   2310   2315   2320

Ala Lys Cys Pro Glu Pro Pro Leu Leu Glu Asn Gln Leu Val Leu Lys
          2325   2330   2335

Glu Leu Thr Thr Glu Val Gly Val Val Thr Phe Ser Cys Lys Glu Gly
          2340   2345   2350

His Val Leu Gln Gly Pro Ser Val Leu Lys Cys Leu Pro Ser Gln Gln
          2355   2360   2365

Trp Asn Asp Ser Phe Pro Val Cys Lys Ile Val Leu Cys Thr Pro Pro
        2370   2375   2380

Pro Leu Ile Ser Phe Gly Val Pro Ile Pro Ser Ser Ala Leu His Phe
2385   2390   2395   2400

Gly Ser Thr Val Lys Tyr Ser Cys Val Gly Gly Phe Phe Leu Arg Gly
        2405   2410   2415

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Asn Ser Thr Thr Leu Cys Gln Pro Asp Gly Thr Trp Ser Ser Pro Leu
          2420                2425                2430
Pro Glu Cys Val Pro Val Glu Cys Pro Gln Pro Glu Glu Ile Pro Asn
          2435                2440                2445
Gly Ile Ile Asp Val Gln Gly Leu Ala Tyr Leu Ser Thr Ala Leu Tyr
        2450                2455                2460
Thr Cys Lys Pro Gly Phe Glu Leu Val Gly Asn Thr Thr Thr Leu Cys
2465                2470                2475                2480
Gly Glu Asn Gly His Trp Leu Gly Gly Lys Pro Thr Cys Lys Ala Ile
              2485                2490                2495
Glu Cys Leu Lys Pro Lys Glu Ile Leu Asn Gly Lys Phe Ser Tyr Thr
              2500                2505                2510
Asp Leu His Tyr Gly Gln Thr Val Thr Tyr Ser Cys Asn Arg Gly Phe
          2515                2520                2525
Arg Leu Glu Gly Pro Ser Ala Leu Thr Cys Leu Glu Thr Gly Asp Trp
      2530                2535                2540
Asp Val Asp Ala Pro Ser Cys Asn Ala Ile His Cys Asp Ser Pro Gln
2545                2550                2555                2560
Pro Ile Glu Asn Gly Phe Val Glu Gly Ala Asp Tyr Ser Tyr Gly Ala
              2565                2570                2575
Ile Ile Ile Tyr Ser Cys Phe Pro Gly Phe Gln Val Ala Gly His Ala
              2580                2585                2590
Met Gln Thr Cys Glu Glu Ser Gly Trp Ser Ser Ser Ile Pro Thr Cys
          2595                2600                2605
Met Pro Ile Asp Cys Gly Leu Pro Pro His Ile Asp Phe Gly Asp Cys
          2610                2615                2620
Thr Lys Leu Lys Asp Asp Gln Gly Tyr Phe Glu Gln Glu Asp Asp Met
2625                2630                2635                2640
Met Glu Val Pro Tyr Val Thr Pro His Pro Pro Tyr His Leu Gly Ala
              2645                2650                2655
Val Ala Lys Thr Trp Glu Asn Thr Lys Glu Ser Pro Ala Thr His Ser
          2660                2665                2670
Ser Asn Phe Leu Tyr Gly Thr Met Val Ser Tyr Thr Cys Asn Pro Gly
          2675                2680                2685
Tyr Glu Leu Leu Gly Asn Pro Val Leu Ile Cys Gln Glu Asp Gly Thr
      2690                2695                2700
Trp Asn Gly Ser Ala Pro Ser Cys Ile Ser Ile Glu Cys Asp Leu Pro
2705                2710                2715                2720
Thr Ala Pro Glu Asn Gly Phe Leu Arg Phe Thr Glu Thr Ser Met Gly
              2725                2730                2735
Ser Ala Val Gln Tyr Ser Cys Lys Pro Gly His Ile Leu Ala Gly Ser
              2740                2745                2750
Asp Leu Arg Leu Cys Leu Glu Asn Arg Lys Trp Ser Gly Ala Ser Pro
          2755                2760                2765
Arg Cys Glu Ala Ile Ser Cys Lys Lys Pro Asn Pro Val Met Asn Gly
      2770                2775                2780
Ser Ile Lys Gly Ser Asn Tyr Thr Tyr Leu Ser Thr Leu Tyr Tyr Glu
2785                2790                2795                2800
Cys Asp Pro Gly Tyr Val Leu Asn Gly Thr Glu Arg Arg Thr Cys Gln
              2805                2810                2815
Asp Asp Lys Asn Trp Asp Glu Asp Glu Pro Ile Cys Ile Pro Val Asp
          2820                2825                2830
Cys Ser Ser Pro Pro Val Ser Ala Asn Gly Gln Val Arg Gly Asp Glu
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Tyr Thr Phe Gln Lys Glu Ile Glu Tyr Thr Cys Asn Glu Gly Phe Leu
      2850                2855                2860
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14

Leu Glu Gly Ala Arg Ser Arg Val Cys Leu Ala Asn Gly Ser Trp Ser
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Gly Ala Thr Pro Asp Cys Val Pro Val Arg Cys Ala Thr Pro Pro Gln
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Val Thr Phe His Cys His Glu Gly Tyr Ile Leu His Gly Ala Pro Lys
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Leu Thr Cys Gln Ser Asp Gly Asn Trp Asp Ala Glu Ile Pro Leu Cys
                2930   2935   2940
Lys Pro Val Asn Cys Gly Pro Pro Glu Asp Leu Ala His Gly Phe Pro
2945   2950   2955   2960
Asn Gly Phe Ser Phe Ile His Gly Gly His Ile Gln Tyr Gln Cys Phe
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Pro Gly Tyr Lys Leu His Gly Asn Ser Ser Arg Arg Cys Leu Ser Asn
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Gly Ser Trp Ser Gly Ser Ser Pro Ser Cys Leu Pro Cys Arg Cys Ser
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Thr Pro Val Ile Glu Tyr Gly Thr Val Asn Gly Thr Asp Phe Asp Cys
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Gly Lys Ala Ala Arg Ile Gln Cys Phe Lys Gly Phe Lys Leu Leu Gly
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Leu Ser Glu Ile Thr Cys Glu Ala Asp Gly Gln Trp Ser Ser Gly Phe
                3045   3050   3055
Pro His Cys Glu His Thr Ser Cys Gly Ser Leu Pro Met Ile Pro Asn
                3060   3065   3070
Ala Phe Ile Ser Glu Thr Ser Ser Trp Lys Glu Asn Val Ile Thr Tyr
                3075   3080   3085
Ser Cys Arg Ser Gly Tyr Val Ile Gln Gly Ser Ser Asp Leu Ile Cys
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Thr Glu Lys Gly Val Trp Ser Gln Pro Tyr Pro Val Cys Glu Pro Leu
3105   3110   3115   3120
Ser Cys Gly Ser Pro Pro Ser Val Ala Asn Ala Val Ala Thr Gly Glu
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Ala His Thr Tyr Glu Ser Glu Val Lys Leu Arg Cys Leu Glu Gly Tyr
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Thr Met Asp Thr Asp Thr Asp Thr Phe Thr Cys Gln Lys Asp Gly Arg
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Trp Phe Pro Glu Arg Ile Ser Cys Ser Pro Lys Lys Cys Pro Leu Pro
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Glu Asn Ile Thr His Ile Leu Val His Gly Asp Asp Phe Ser Val Asn
3185   3190   3195   3200
Arg Gln Val Ser Val Ser Cys Ala Glu Gly Tyr Thr Phe Glu Gly Val
                3205   3210   3215
Asn Ile Ser Val Cys Gln Leu Asp Gly Thr Trp Glu Pro Pro Phe Ser
        3220   3225   3230
Asp Glu Ser Cys Ser Pro Val Ser Cys Gly Lys Pro Glu Ser Pro Glu
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His Gly Phe Val Val Gly Ser Lys Tyr Thr Phe Glu Ser Thr Ile Ile
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Tyr Gln Cys Glu Pro Gly Tyr Glu Leu Glu Gly Asn Arg Glu Arg Val
3265   3270   3275   3280
Cys Gln Glu Asn Arg Gln Trp Ser Gly Gly Val Ala Ile Cys Lys Glu
                3285   3290   3295
Thr Arg Cys Glu Thr Pro Leu Glu Phe Leu Asn Gly Lys Ala Asp Ile
        3300   3305   3310

15

Glu Asn Arg Thr Thr Gly Pro Asn Val Val Tyr Ser Cys Asn Arg Gly
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Tyr Ser Leu Glu Gly Pro Ser Glu Ala His Cys Thr Glu Asn Gly Thr
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Trp Ser His Pro Val Pro Leu Cys Lys Pro Asn Pro Cys Pro Val Pro
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Phe Val Ile Pro Glu Asn Ala Leu Leu Ser Glu Lys Glu Phe Tyr Val
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Asp Gln Asn Val Ser Ile Lys Cys Arg Glu Gly Phe Leu Leu Gln Gly
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His Gly Ile Ile Thr Cys Asn Pro Asp Glu Thr Trp Thr Gln Thr Ser
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Ala Lys Cys Glu Lys Ile Ser Cys Gly Pro Pro Ala His Val Glu Asn
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Ala Ile Ala Arg Gly Val His Tyr Gln Tyr Gly Asp Met Ile Thr Tyr
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Ser Cys Tyr Ser Gly Tyr Met Leu Glu Gly Phe Leu Arg Ser Val Cys
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Leu Glu Asn Gly Thr Trp Thr Ser Pro Pro Ile Cys Arg Ala Val Cys
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Arg Phe Pro Cys Gln Asn Gly Gly Ile Cys Gln Arg Pro Asn Ala Cys
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Ser Cys Pro Glu Gly Trp Met Gly Arg Leu Cys Glu Glu Pro Ile Cys
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Ile Leu Pro Cys Leu Asn Gly Gly Arg Cys Val Ala Pro Tyr Gln Cys
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Asp Cys Pro Pro Gly Trp Thr Gly Ser Arg Cys His Thr Ala Val Cys
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Gln Ser Pro Cys Leu Asn Gly Gly Lys Cys Val Arg Pro Asn Arg Cys
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16

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17

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<212> PRT
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Arg Leu Phe Pro Glu Thr Ala Pro Gly Ala Pro Gly Ser Ile Pro Ala
        35                  40                  45
Pro Pro Ala Pro Gly Asp Glu Ala Ala Gly Ser Arg Val Glu Arg Leu
    50                  55                  60
Gly Gln Ala Phe Arg Arg Arg Val Arg Leu Leu Arg Glu Leu Ser Glu
65                  70                  75                  80
Arg Leu Glu Leu Val Phe Leu Val Asp Asp Ser Ser Ser Val Gly Glu
            85                  90                  95
Val Asn Phe Arg Ser Glu Leu Met Phe Val Arg Lys Leu Leu Ser Asp
            100                 105                 110
Phe Pro Val Val Pro Thr Ala Thr Arg Val Ala Ile Val Thr Phe Ser
            115                 120                 125
Ser Lys Asn Tyr Val Val Pro Arg Val Asp Tyr Ile Ser Thr Arg Arg
    130                 135                 140
Ala Arg Gln His Lys Cys Ala Leu Leu Leu Gln Glu Ile Pro Ala Ile
145                 150                 155                 160
Ser Tyr Arg Gly Gly Gly Thr Tyr Thr Lys Gly Ala Phe Gln Gln Ala
                165                 170                 175
Ala Gln Ile Leu Leu His Ala Arg Glu Asn Ser Thr Lys Val Val Phe
            180                 185                 190
```

18

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Leu Ile Thr Asp Gly Tyr Ser Asn Gly Gly Asp Pro Arg Pro Ile Ala
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Ala Ser Leu Arg Asp Ser Gly Val Glu Ile Phe Thr Phe Gly Ile Trp
        210               215               220
Gln Gly Asn Ile Arg Glu Leu Asn Asp Met Ala Ser Thr Pro Lys Glu
225               230               235               240
Glu His Cys Tyr Leu Leu His Ser Phe Glu Glu Phe Glu Ala Leu Ala
        245               250               255
Arg Arg Ala Leu His Glu Asp Leu Pro Ser Gly Ser Phe Ile Gln Asp
        260               265               270
Asp Met Val His Cys Ser Tyr Leu Cys Asp Glu Gly Lys Asp Cys Cys
        275               280               285
Asp Arg Met Gly Ser Cys Lys Cys Gly Thr His Thr Gly His Phe Glu
        290               295               300
Cys Ile Cys Glu Lys Gly Tyr Tyr Gly Lys Gly Leu Gln Tyr Glu Cys
305               310               315               320
Thr Ala Cys Pro Ser Gly Thr Tyr Lys Pro Glu Gly Ser Pro Gly Gly
        325               330               335
Ile Ser Ser Cys Ile Pro Cys Pro Asp Glu Asn His Thr Ser Pro Pro
        340               345               350
Gly Ser Thr Ser Pro Glu Asp Cys Val Cys Arg Glu Gly Tyr Arg Ala
        355               360               365
Ser Gly Gln Thr Cys Glu Leu Val His Cys Pro Ala Leu Lys Pro Pro
        370               375               380
Glu Asn Gly Tyr Phe Ile Gln Asn Thr Cys Asn Asn His Phe Asn Ala
385               390               395               400
Ala Cys Gly Val Arg Cys His Pro Gly Phe Asp Leu Val Gly Ser Ser
        405               410               415
Ile Ile Leu Cys Leu Pro Asn Gly Leu Trp Ser Gly Ser Glu Ser Tyr
        420               425               430
Cys Arg Val Arg Thr Cys Pro His Leu Arg Gln Pro Lys His Gly His
        435               440               445
Ile Ser Cys Ser Thr Arg Glu Met Leu Tyr Lys Thr Thr Cys Leu Val
        450               455               460
Ala Cys Asp Glu Gly Tyr Arg Leu Glu Gly Ser Asp Lys Leu Thr Cys
465               470               475               480
Gln Gly Asn Ser Gln Trp Asp Gly Pro Glu Pro Arg Cys Val Glu Arg
        485               490               495
His Cys Ser Thr Phe Gln Met Pro Lys Asp Val Ile Ile Ser Pro His
        500               505               510
Asn Cys Gly Lys Gln Pro Ala Lys Phe Gly Thr Ile Cys Tyr Val Ser
        515               520               525
Cys Arg Gln Gly Phe Ile Leu Ser Gly Val Lys Glu Met Leu Arg Cys
        530               535               540
Thr Thr Ser Gly Lys Trp Asn Val Gly Val Gln Ala Ala Val Cys Lys
545               550               555               560
Asp Val Glu Ala Pro Gln Ile Asn Cys Pro Lys Asp Ile Glu Ala Lys
        565               570               575
Thr Leu Glu Gln Gln Asp Ser Ala Asn Val Thr Trp Gln Ile Pro Thr
        580               585               590
Ala Lys Asp Asn Ser Gly Glu Lys Val Ser Val His Val His Pro Ala
        595               600               605
Phe Thr Pro Pro Tyr Leu Phe Pro Ile Gly Asp Val Ala Ile Val Tyr
        610               615               620
Thr Ala Thr Asp Leu Ser Gly Asn Gln Ala Ser Cys Ile Phe His Ile
625               630               635               640
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Lys Val Ile Asp Ala Glu Pro Pro Val Ile Asp Trp Cys Arg Ser Pro
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Pro Pro Val Gln Val Ser Glu Lys Val His Ala Ala Ser Trp Asp Glu
            660                     665                 670
Pro Gln Phe Ser Asp Asn Ser Gly Ala Glu Leu Val Ile Thr Arg Ser
            675                     680                 685
His Thr Gln Gly Asp Leu Phe Pro Gln Gly Glu Thr Ile Val Gln Tyr
    690                     695                 700
Thr Ala Thr Asp Pro Ser Gly Asn Asn Arg Thr Cys Asp Ile His Ile
705                     710                 715                 720
Val Ile Lys Gly Ser Pro Cys Glu Ile Pro Phe Thr Pro Val Asn Gly
                725                     730                 735
Asp Phe Ile Cys Thr Pro Asp Asn Thr Gly Val Asn Cys Thr Leu Thr
            740                     745                 750
Cys Leu Glu Gly Tyr Asp Phe Thr Glu Gly Ser Thr Asp Lys Tyr Tyr
            755                     760                 765
Cys Ala Tyr Glu Asp Gly Val Trp Lys Pro Thr Tyr Thr Thr Glu Trp
    770                     775                 780
Pro Asp Cys Ala Lys Lys Arg Phe Ala Asn His Gly Phe Lys Ser Phe
785                     790                 795                 800
Glu Met Phe Tyr Lys Ala Ala Arg Cys Asp Asp Thr Asp Leu Met Lys
            805                     810                 815
Lys Phe Ser Glu Ala Phe Glu Thr Thr Leu Gly Lys Met Val Pro Ser
            820                     825                 830
Phe Cys Ser Asp Ala Glu Asp Ile Asp Cys Arg Leu Glu Glu Asn Leu
            835                     840                 845
Thr Lys Lys Tyr Cys Leu Glu Tyr Asn Tyr Asp Tyr Glu Asn Gly Phe
    850                     855                 860
Ala Ile Gly Pro Gly Gly Trp Gly Ala Ala Asn Arg Leu Asp Tyr Ser
865                     870                 875                 880
Tyr Asp Asp Phe Leu Asp Thr Val Gln Glu Thr Ala Thr Ser Ile Gly
            885                     890                 895
Asn Ala Lys Ser Ser Arg Ile Lys Arg Ser Ala Pro Leu Ser Asp Tyr
            900                     905                 910
Lys Ile Lys Leu Ile Phe Asn Ile Thr Ala Ser Val Pro Leu Pro Asp
            915                     920                 925
Glu Arg Asn Asp Thr Leu Glu Trp Glu Asn Gln Gln Arg Leu Leu Gln
    930                     935                 940
Thr Leu Glu Thr Ile Thr Asn Lys Leu Lys Arg Thr Leu Asn Lys Asp
945                     950                 955                 960
Pro Met Tyr Ser Phe Gln Leu Ala Ser Glu Ile Leu Ile Ala Asp Ser
            965                     970                 975
Asn Ser Leu Glu Thr Lys Lys Ala Ser Pro Phe Cys Arg Pro Gly Ser
            980                     985                 990
Val Leu Arg Gly Arg Met Cys Val Asn Cys Pro Leu Gly Thr Tyr Tyr
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Asn Leu Glu His Phe Thr Cys Glu Ser Cys Arg Ile Gly Ser Tyr Gln
    1010                    1015                1020
Asp Glu Glu Gly Gln Leu Glu Cys Lys Leu Cys Pro Ser Gly Met Tyr
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Thr Glu Tyr Ile His Ser Arg Asn Ile Ser Asp Cys Lys Ala Gln Cys
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Lys Gln Gly Thr Tyr Ser Tyr Ser Gly Leu Glu Thr Cys Glu Ser Cys
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Pro Leu Gly Thr Tyr Gln Pro Lys Phe Gly Ser Arg Ser Cys Leu Ser
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20

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Lys Ala Phe Cys Leu Ala Cys Pro Phe Tyr Gly Thr Thr Pro Phe Ala
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Gly Ser Arg Ser Ile Thr Glu Cys Ser Ser Phe Ser Ser Thr Phe Ser
          1155              1160              1165
Ala Ala Glu Glu Ser Val Val Pro Pro Ala Ser Leu Gly His Ile Lys
    1170              1175              1180
Lys Arg His Glu Ile Ser Ser Gln Val Phe His Glu Cys Phe Phe Asn
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Pro Cys His Asn Ser Gly Thr Cys Gln Gln Leu Gly Arg Gly Tyr Val
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Cys Leu Cys Pro Leu Gly Tyr Thr Gly Leu Lys Cys Glu Thr Asp Ile
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Asp Glu Cys Ser Pro Leu Pro Cys Leu Asn Asn Gly Val Cys Lys Asp
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Leu Val Gly Glu Phe Ile Cys Glu Cys Pro Ser Gly Tyr Thr Gly Gln
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Arg Cys Glu Glu Asn Ile Asn Glu Cys Ser Ser Ser Pro Cys Leu Asn
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